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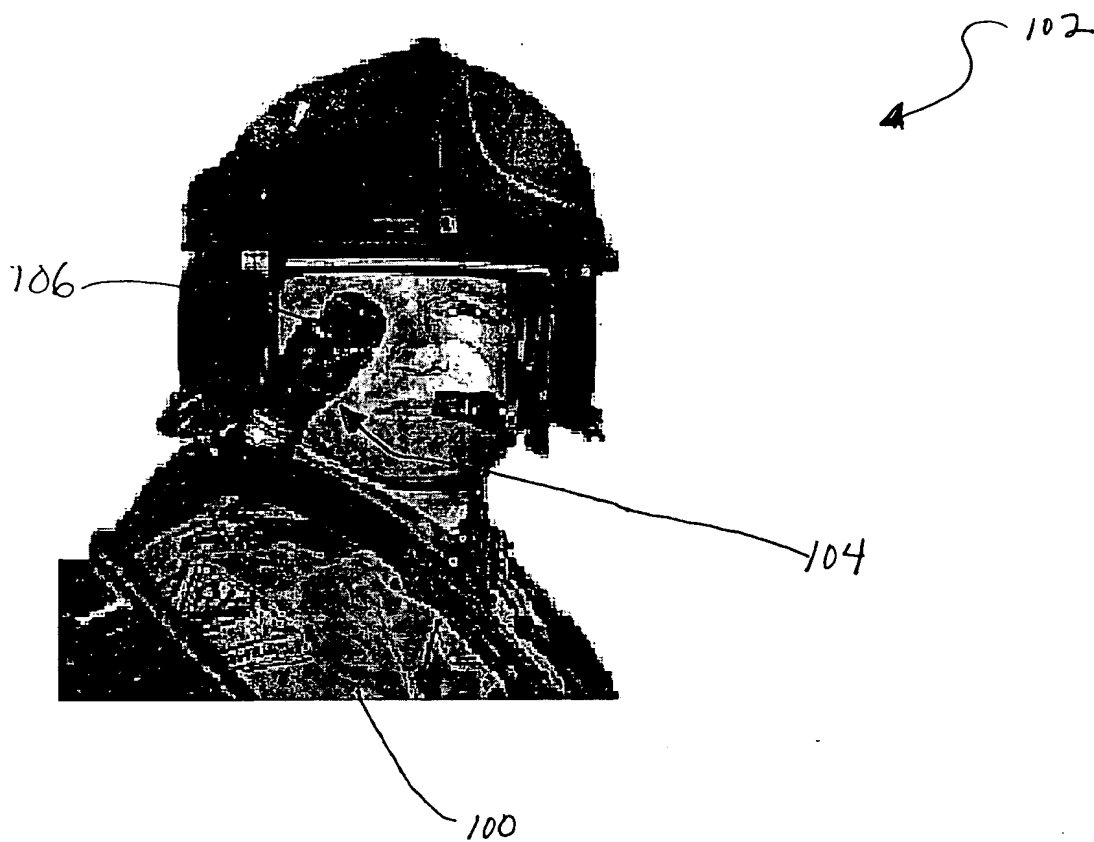
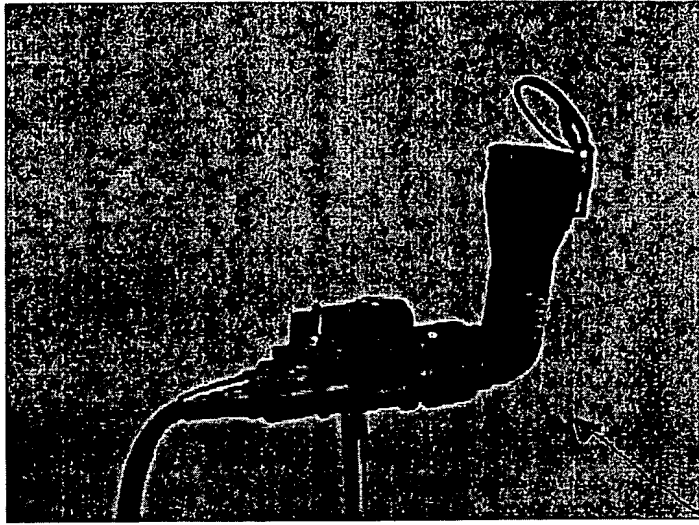


FIG. 1



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FIG. 2

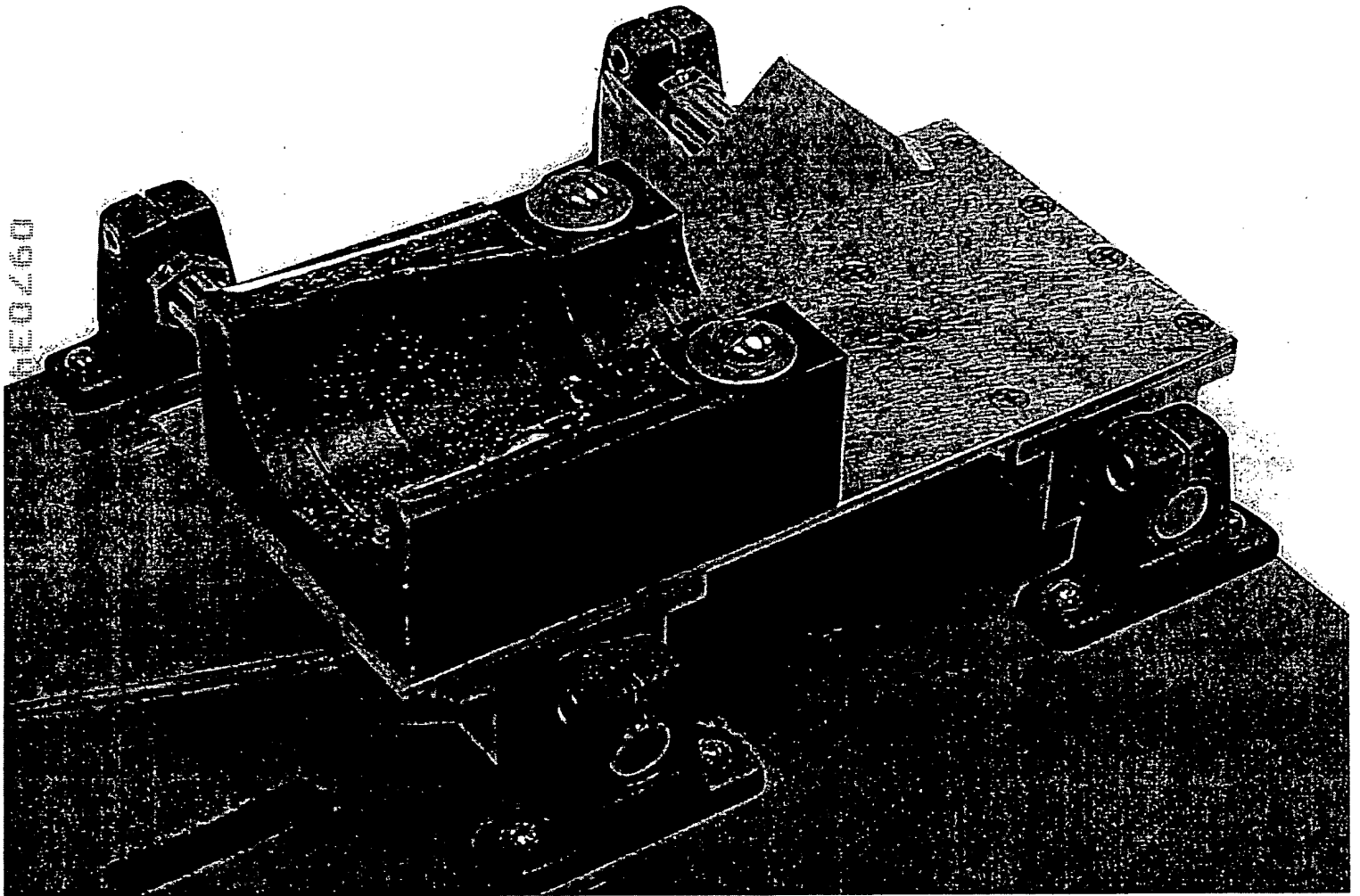
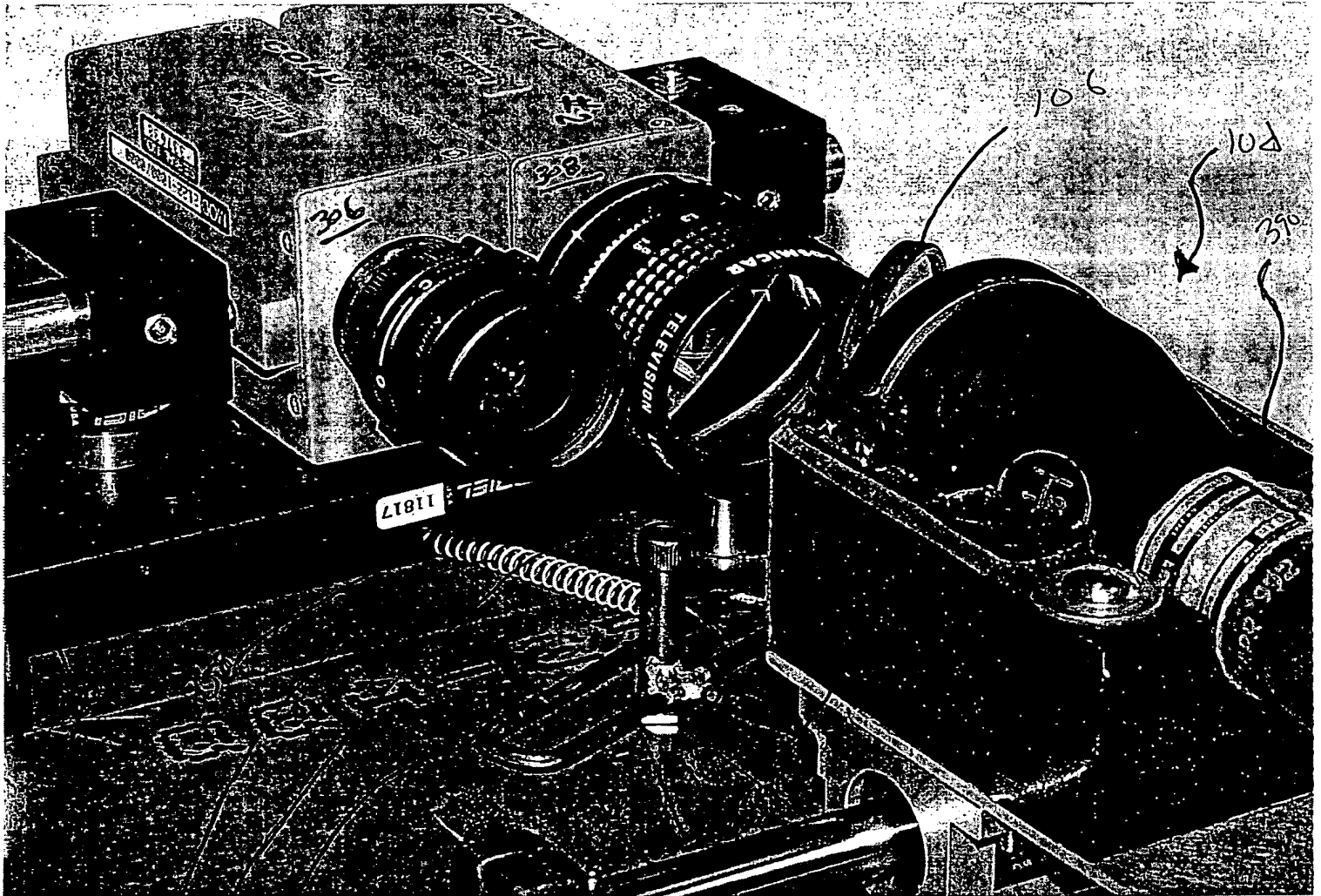


FIG 3A



350  
352  
356

FIG. 3B

F 16 3 C

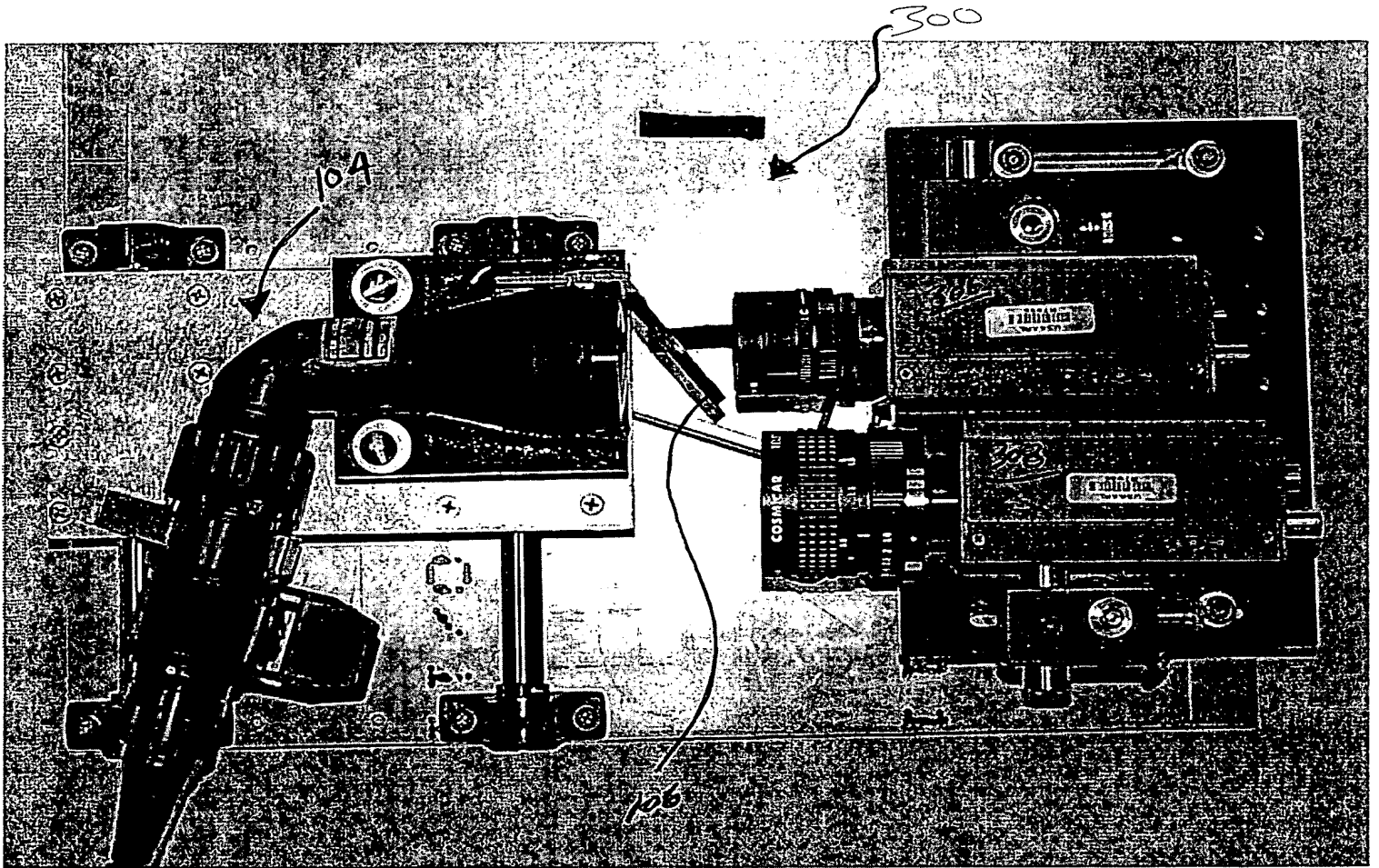


FIG. 3D

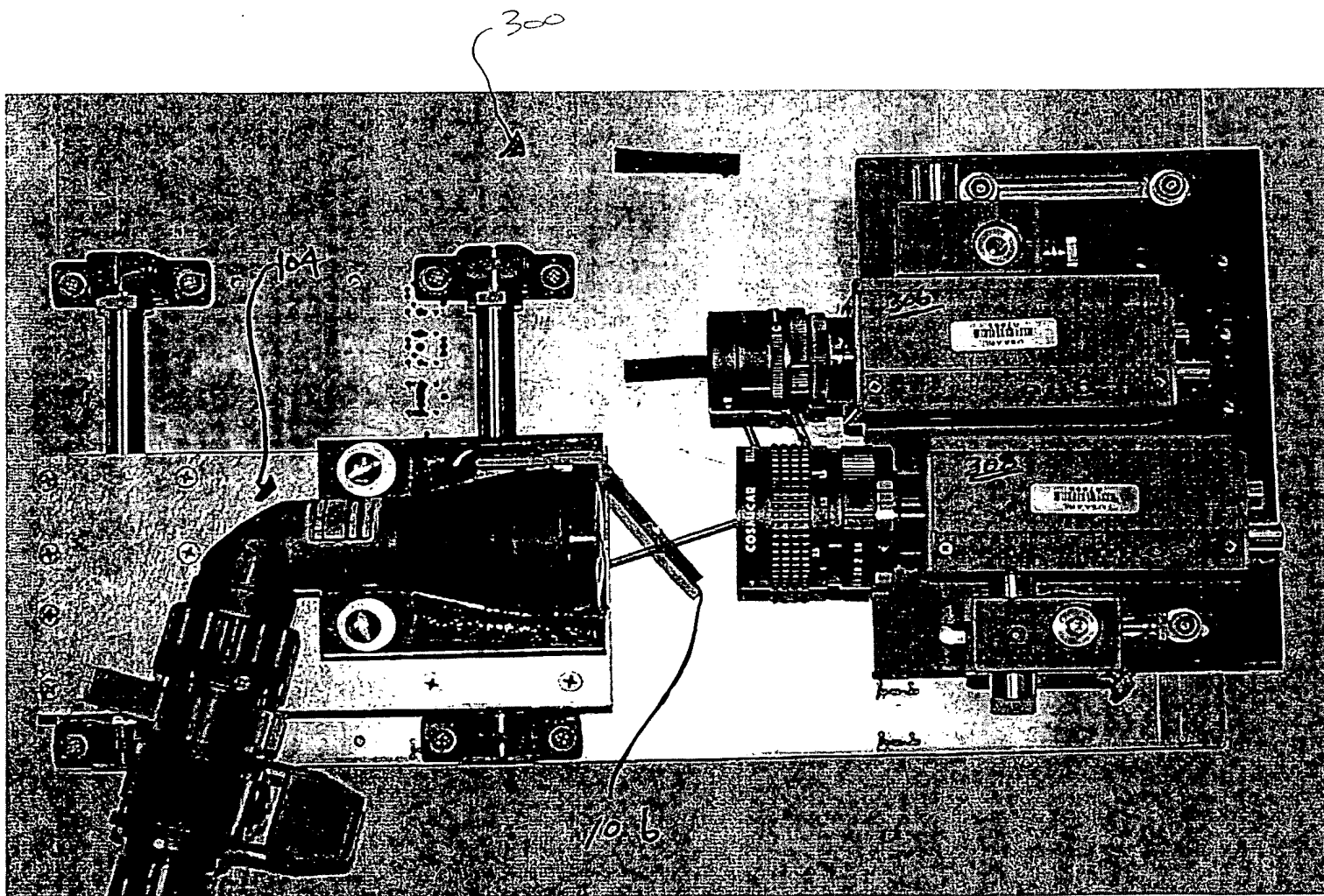


FIG 3 R

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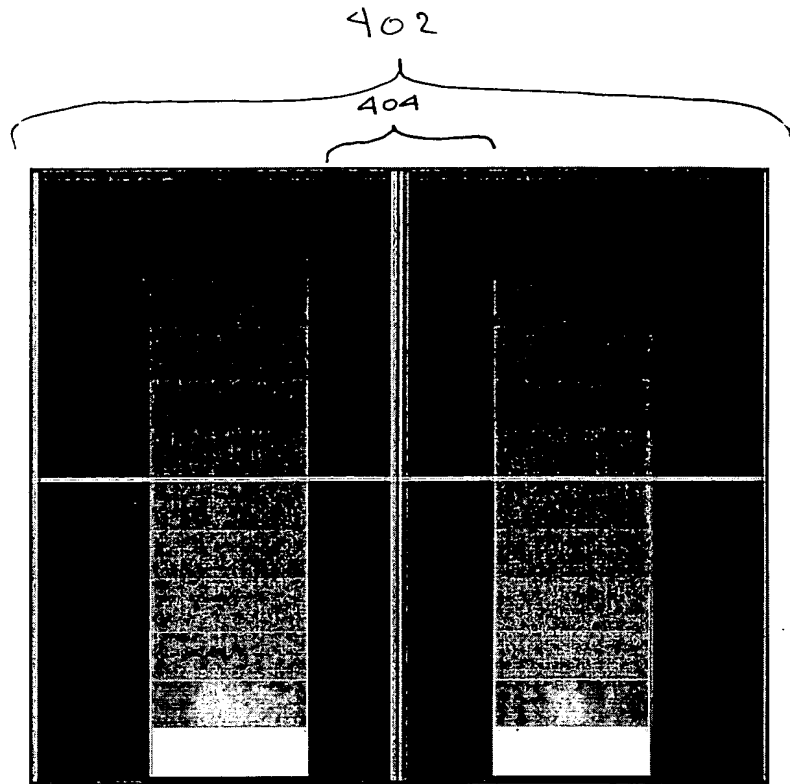


FIG. 9





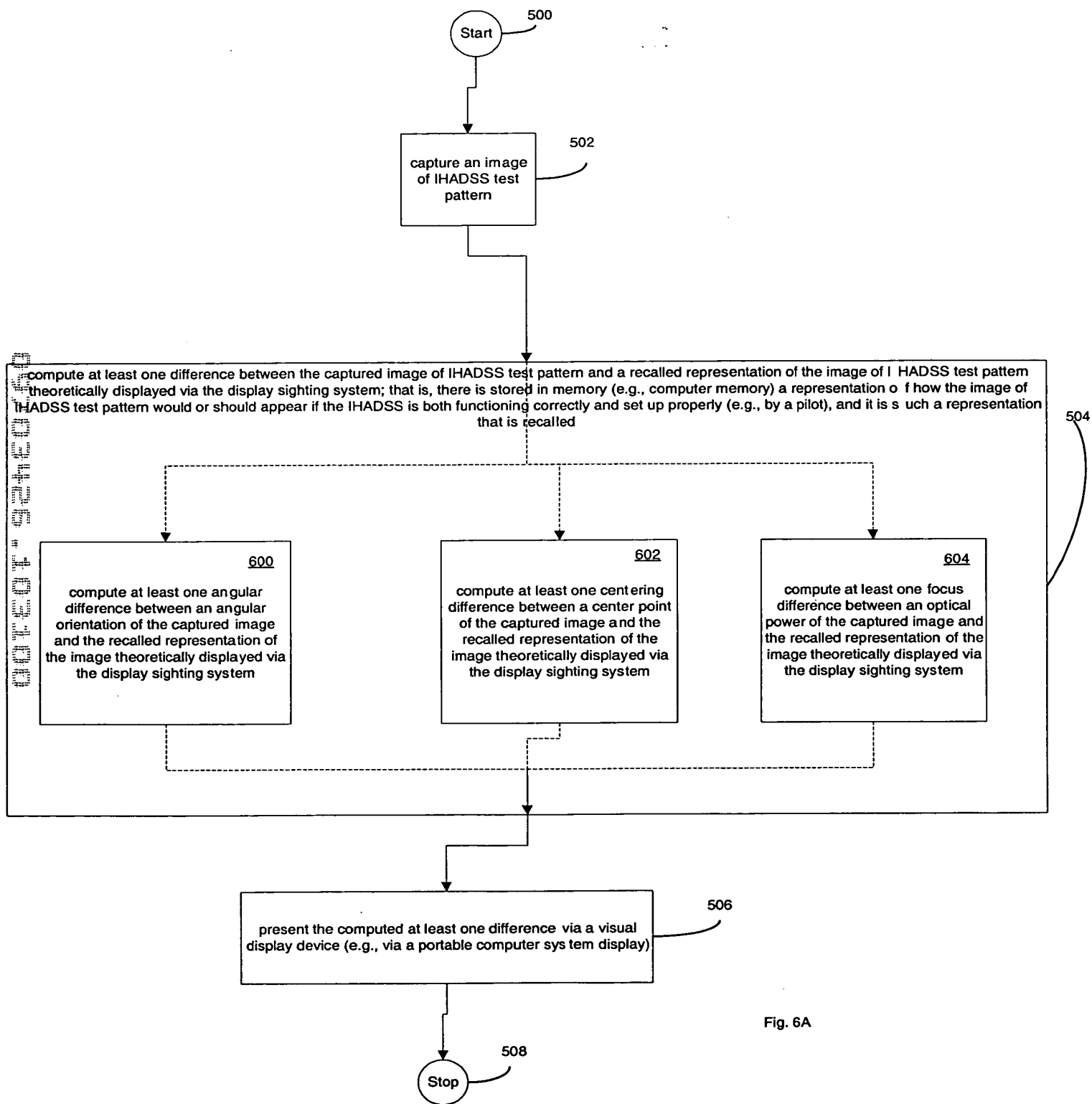
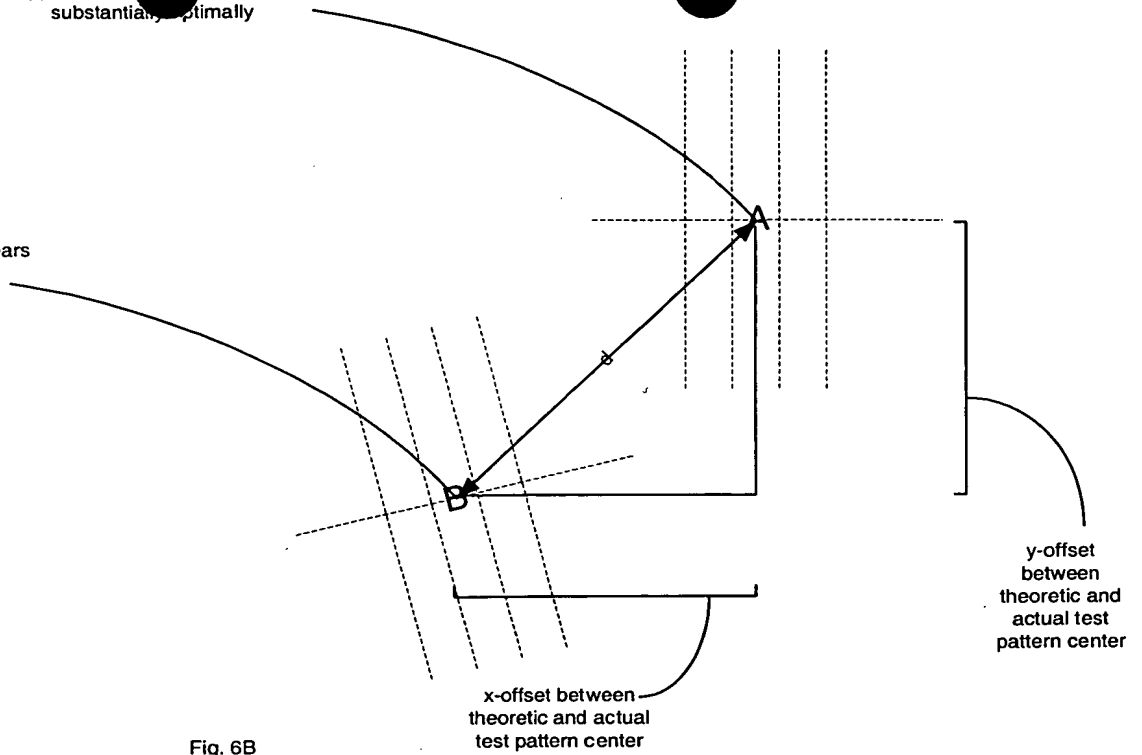


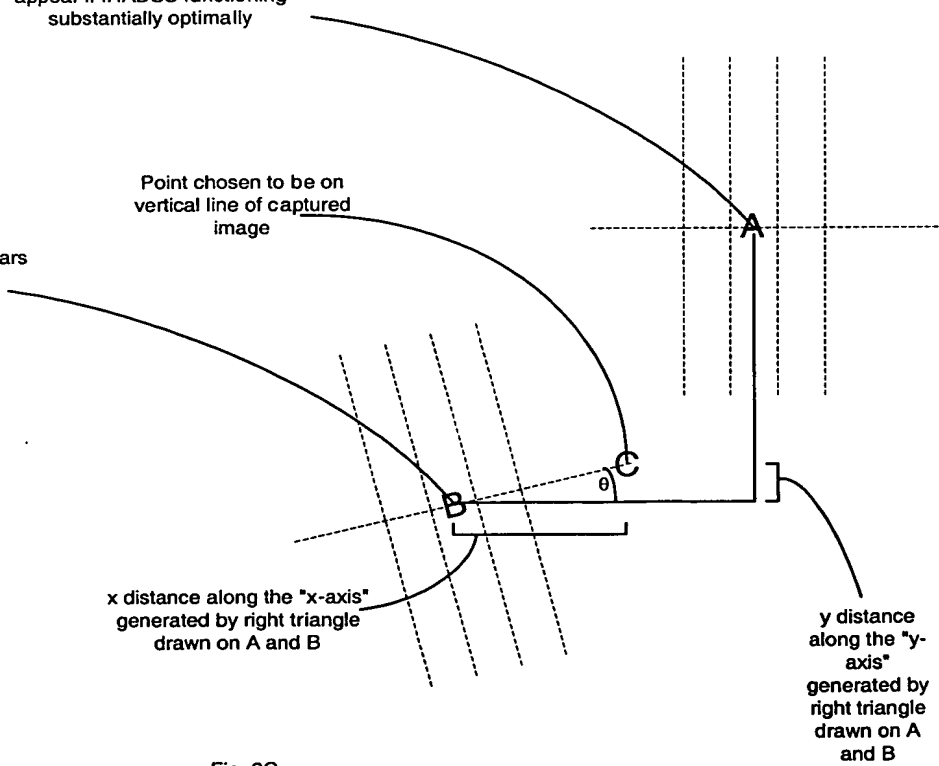
Fig. 6A



⋮

⋮

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vertic





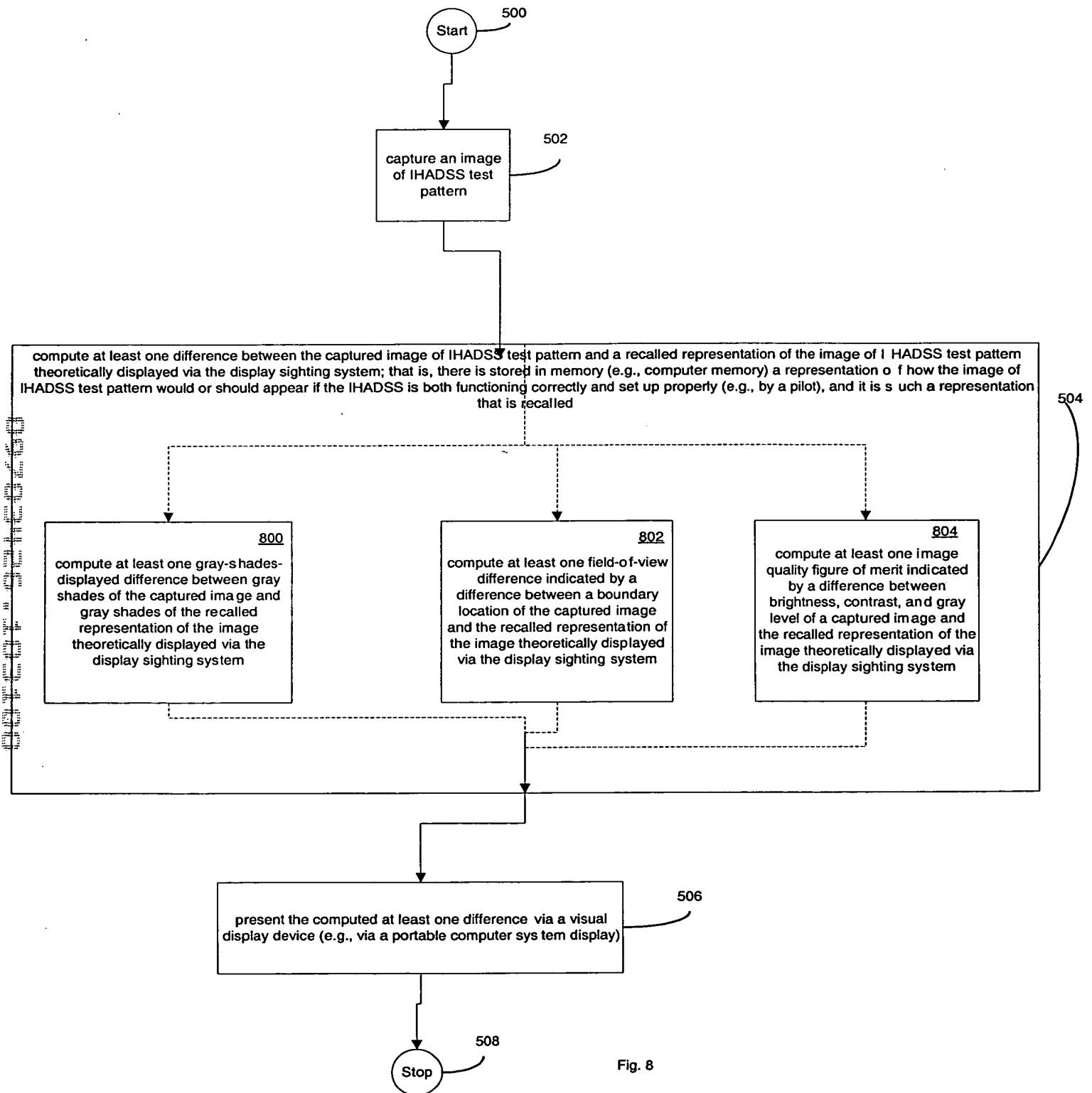


Fig. 8

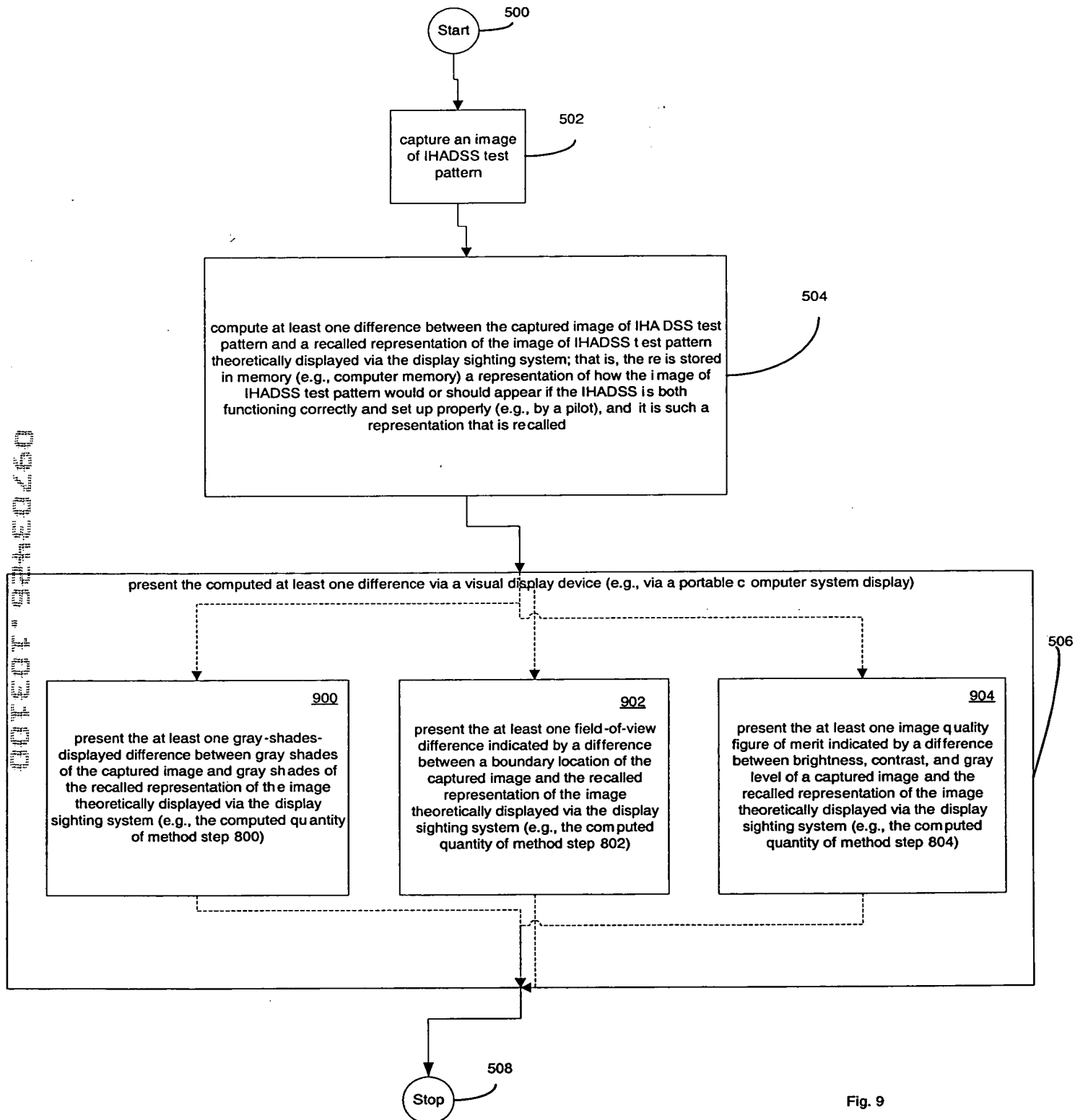


Fig. 9

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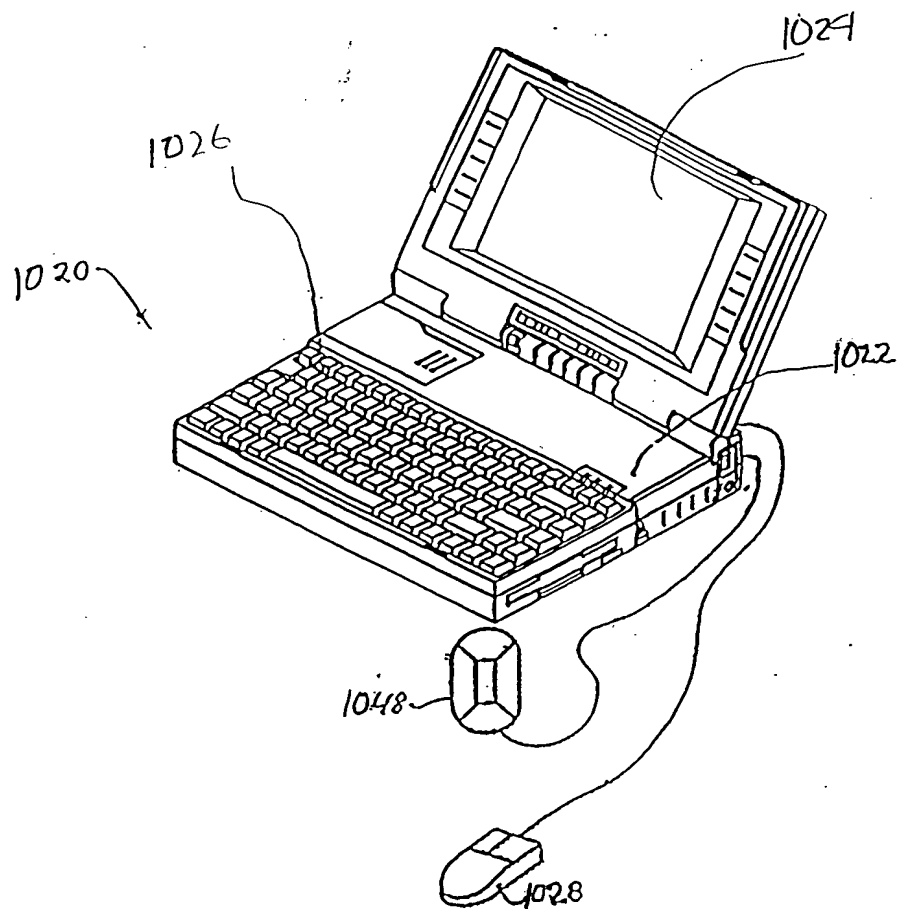


FIG 10



Figure A1. The IHADSS

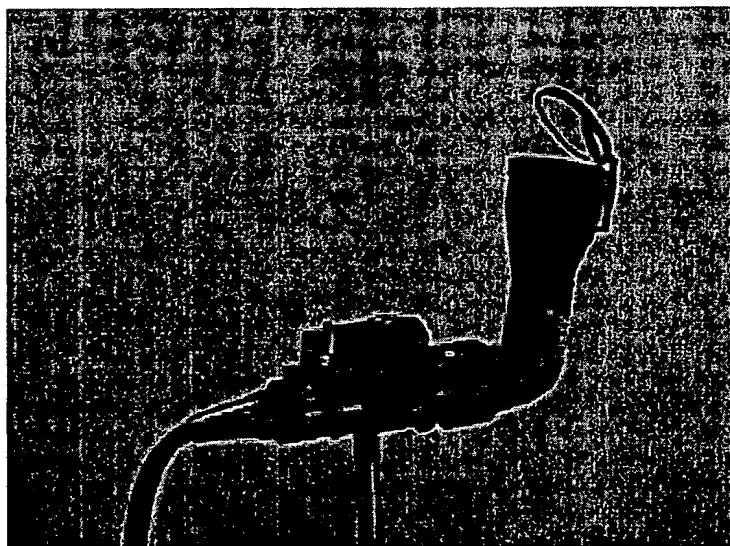


Figure A2. The IHADSS HDU.



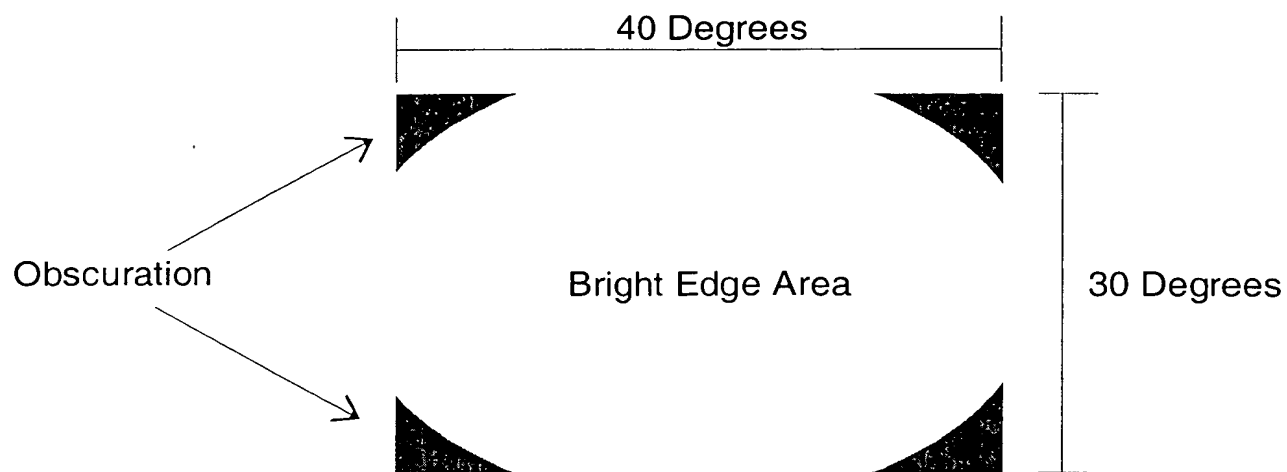


Figure A3. Display size.

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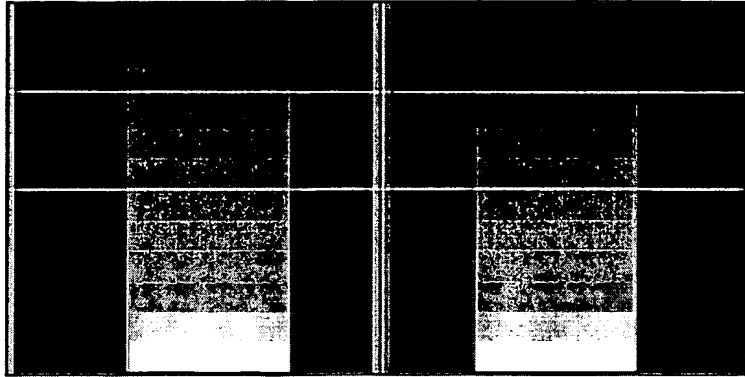


Figure A4. IHADSS built-in test pattern.

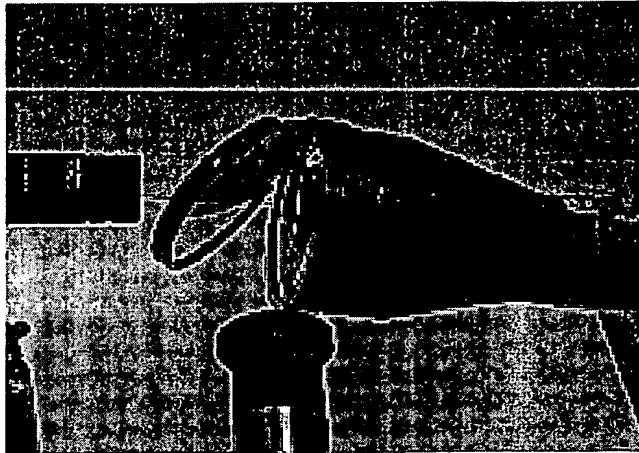


Figure A5. Previous design.

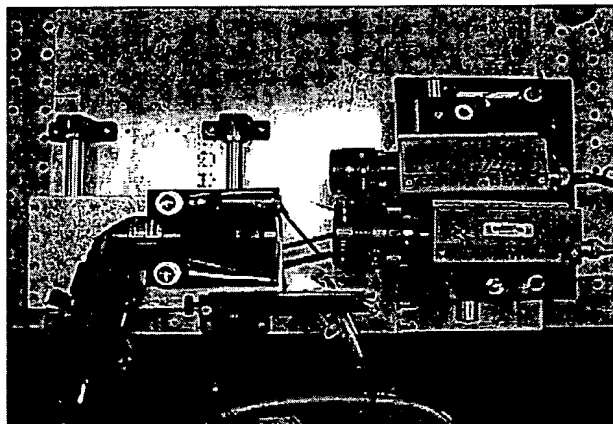


Figure A6. Revised design.

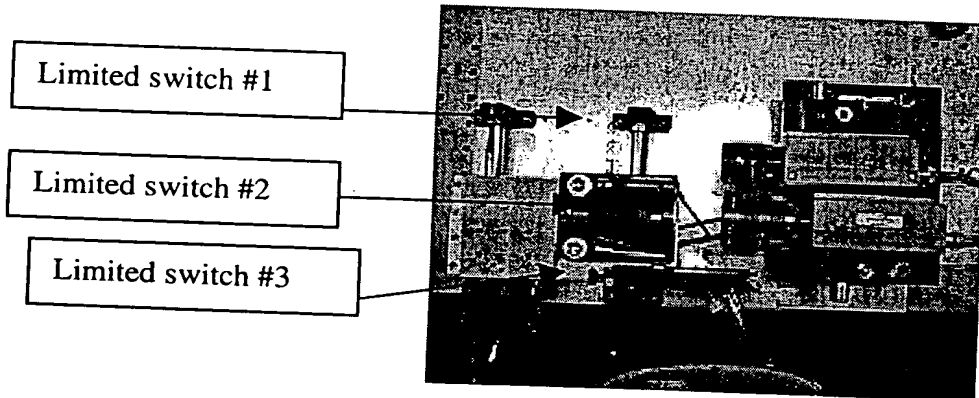


Figure A7. Locations of sensors in proposed HMD fixture design.

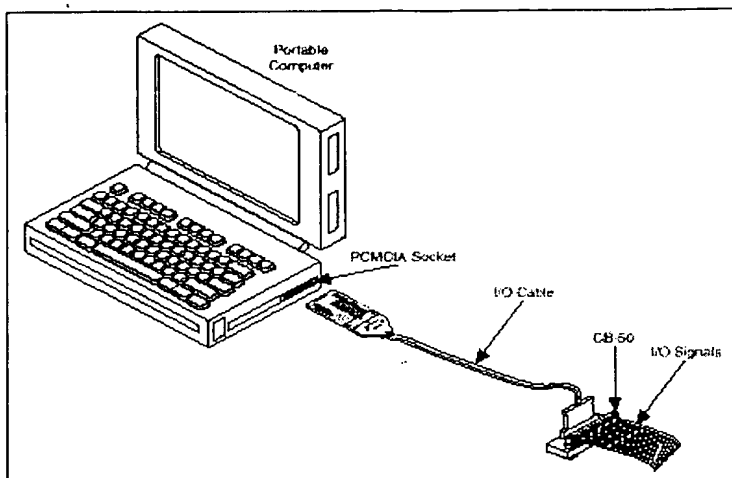


Figure A8. Typical DAQCard-DIO-24 configuration.

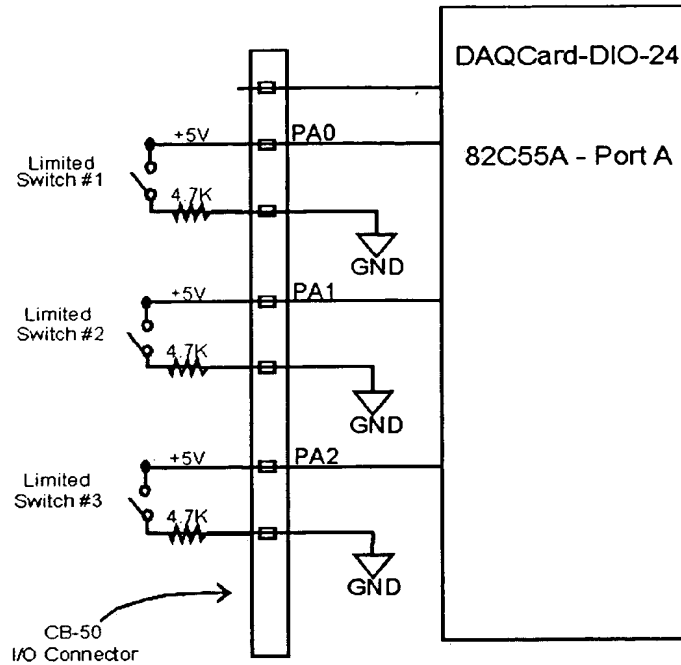


Figure A9. Schematic diagram of proposed design.  
1.

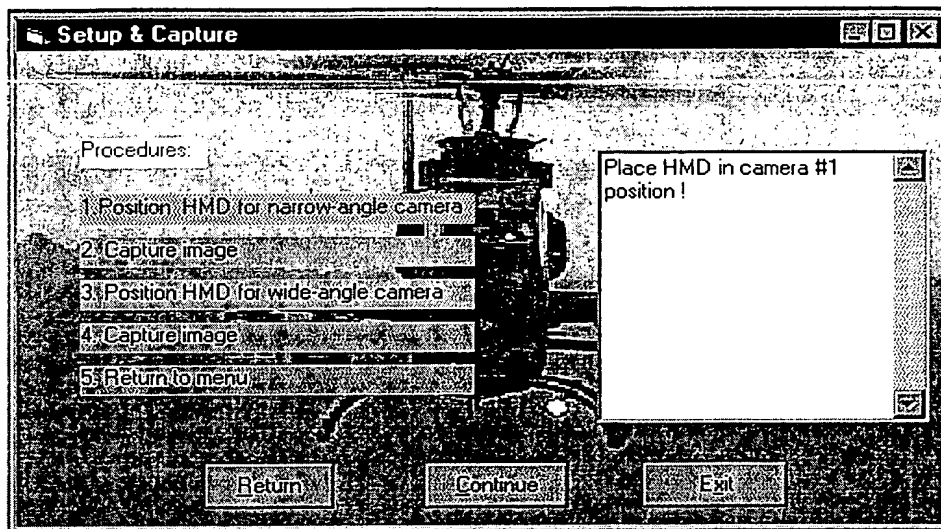


Figure A10. Initial display screen, switches open.

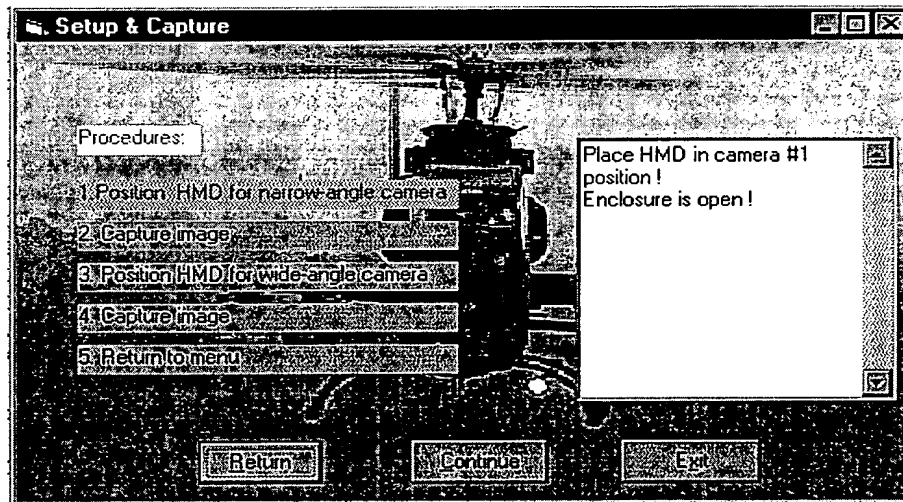


Figure A11. Display screen, Continue button, switches open.

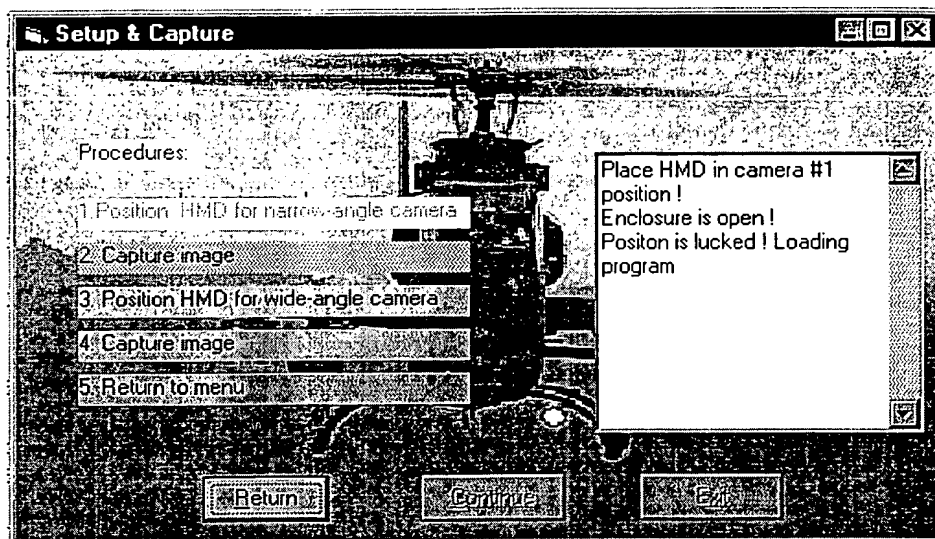


Figure A12. Display screen switches 1 and 2 pressed.

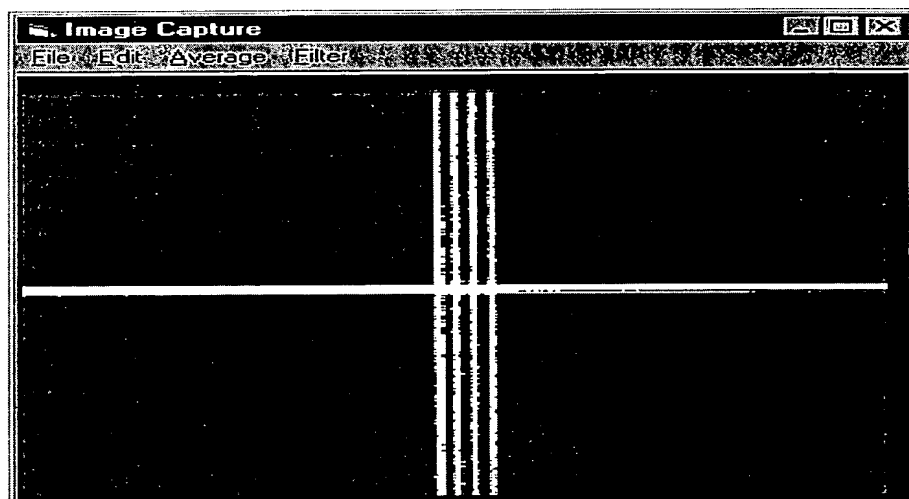


Figure A13. Display screen, image capture module activated.



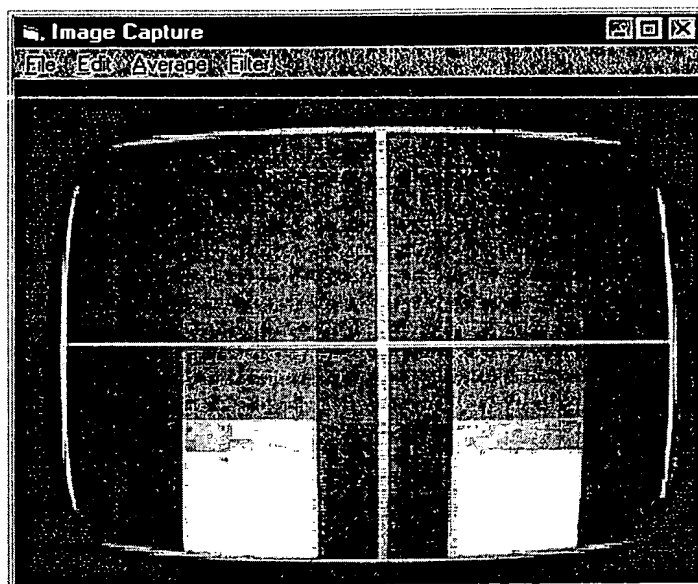


Figure A14. Screenshot of image capture module.

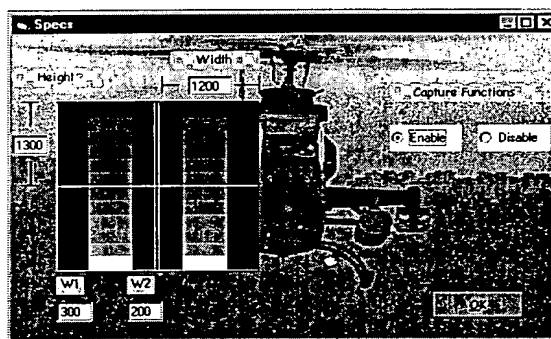
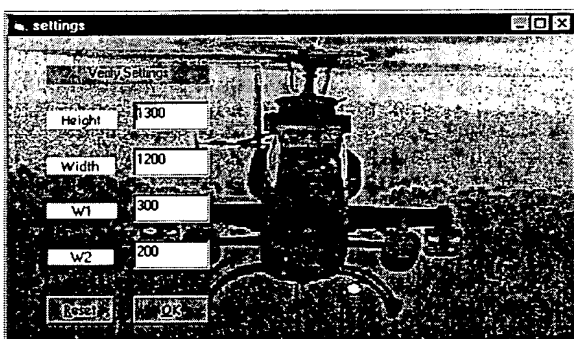


Figure A15. Screenshots of parameter setting display screens.

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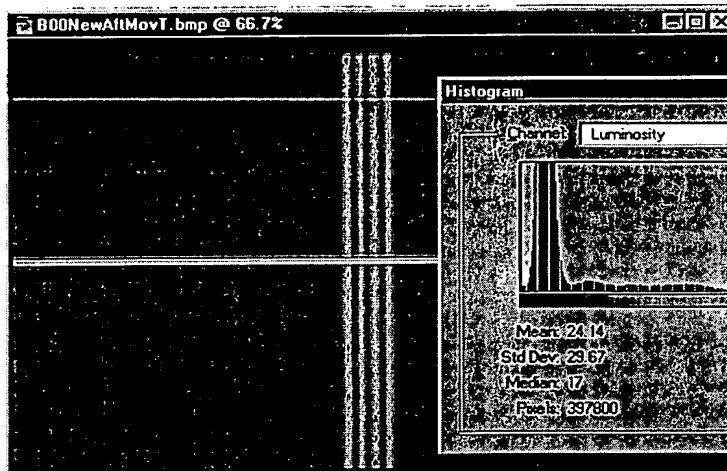


Figure A16. Original image.

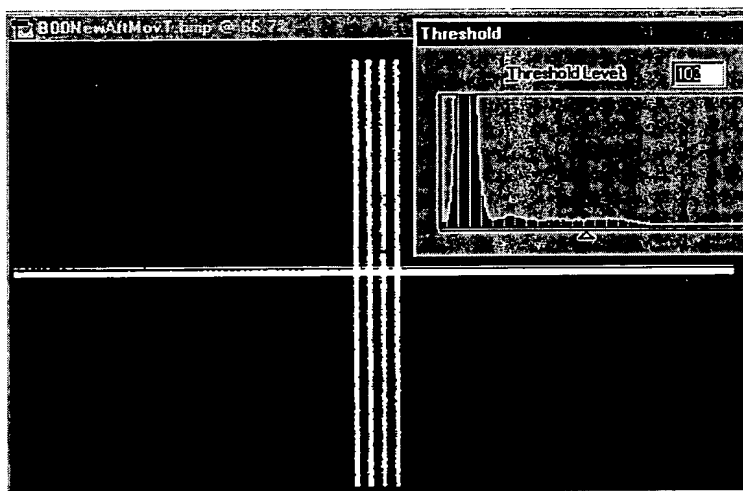


Figure A17. Image after binary processing.

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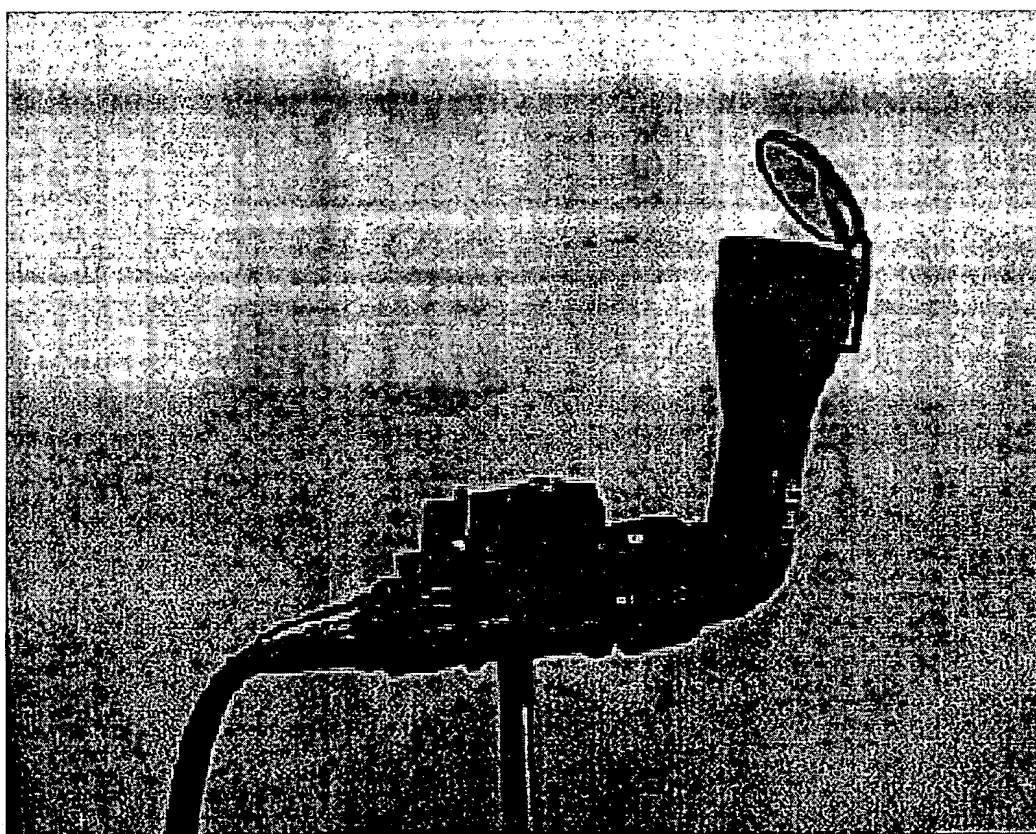


Figure B2. The IHADSS HDU.

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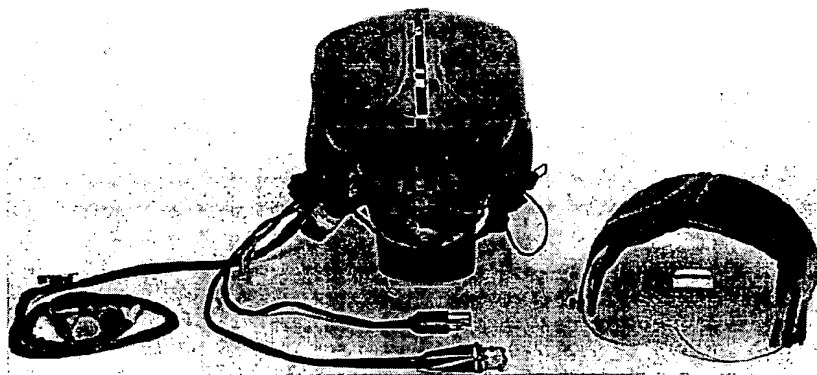


Figure B1. The ITHU of the AH-64 IHADSS.

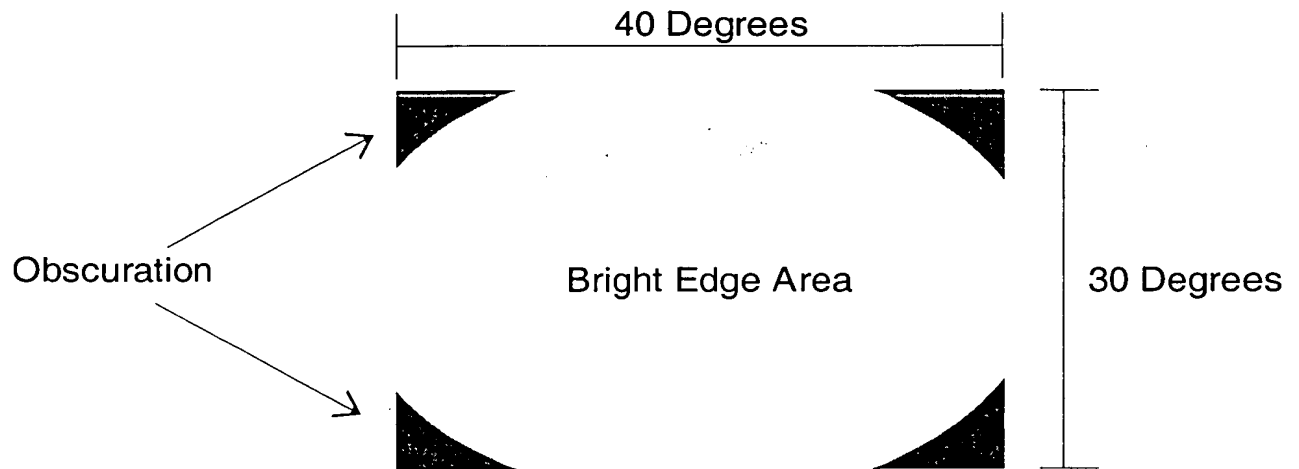


Figure B3. Display size.

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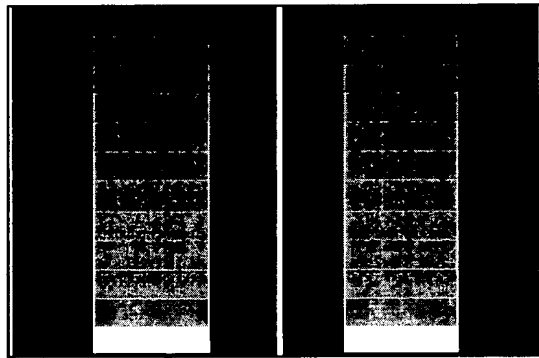


Figure B4. Test pattern from the  
IHADSS HMD.

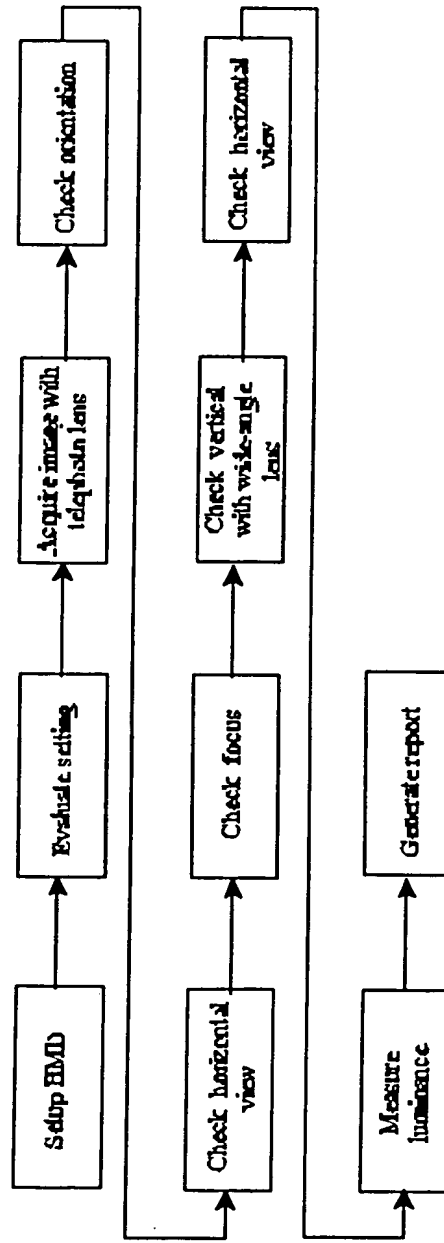


Figure 5. Flow chart for HMD prototype tester operation.

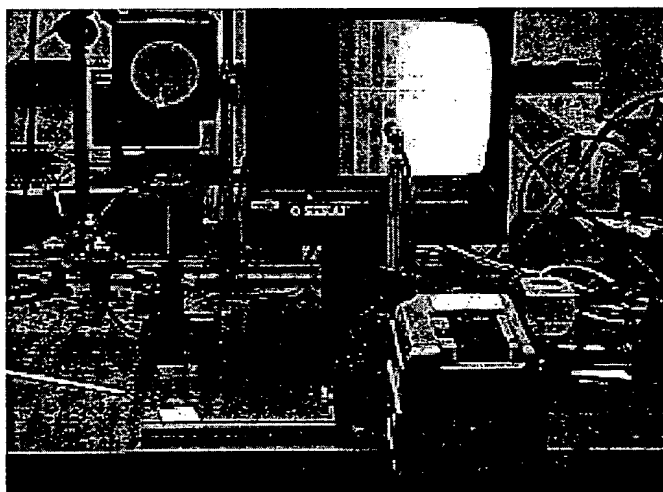


Figure B6. Experimental setup for camera sensitivity analysis.



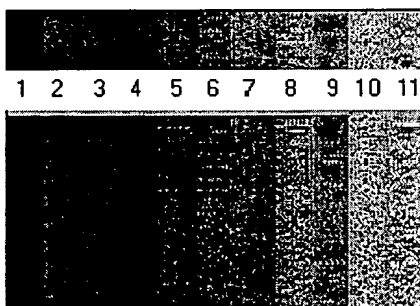


Figure B7. Sampling locations on the test pattern.

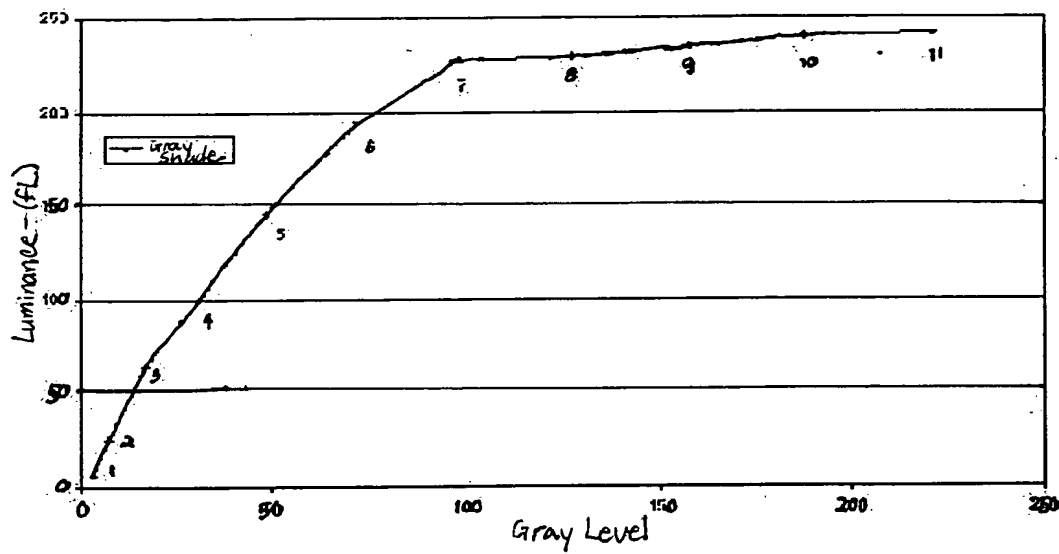


Figure B8. Plot of photometer and CCD camera data.

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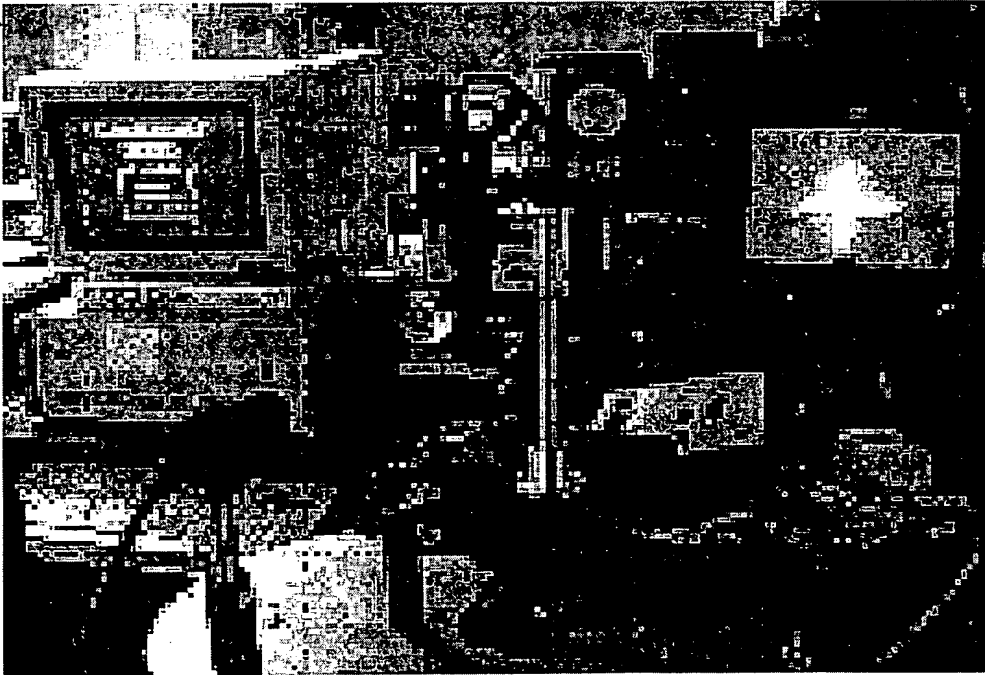


Figure B9. Set up for test pattern measurement.

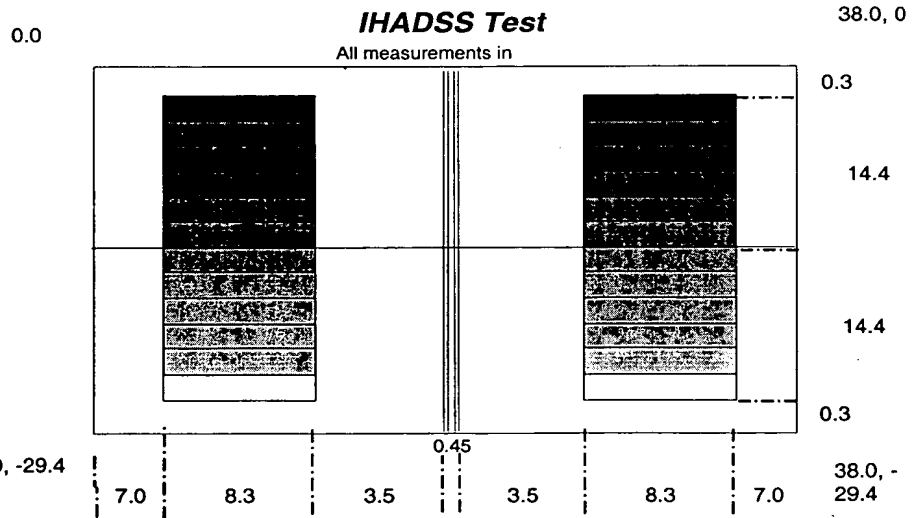


Figure B10. Test pattern design based on measurement results.

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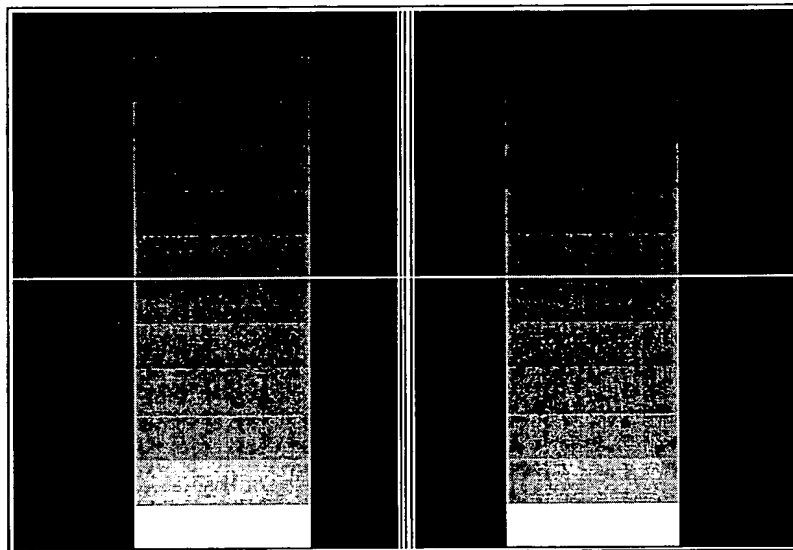


Figure B11. Replicated test pattern image.

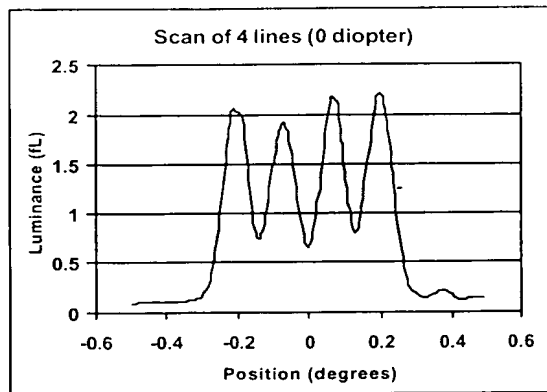


Figure 12. Measurement of luminance of the center lines.

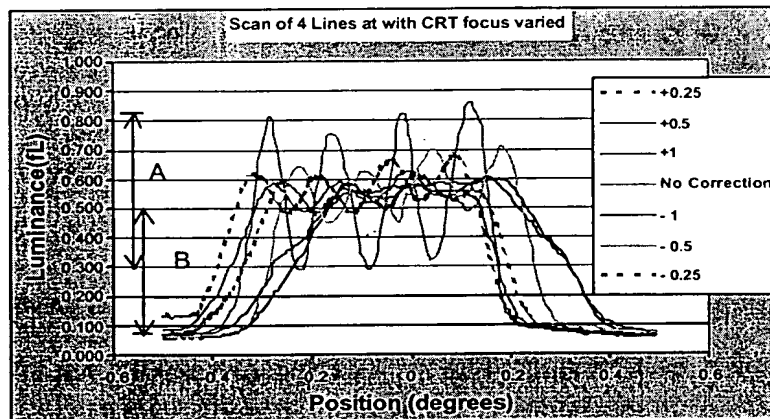


Figure 13. Center lines measurement with varied focus.

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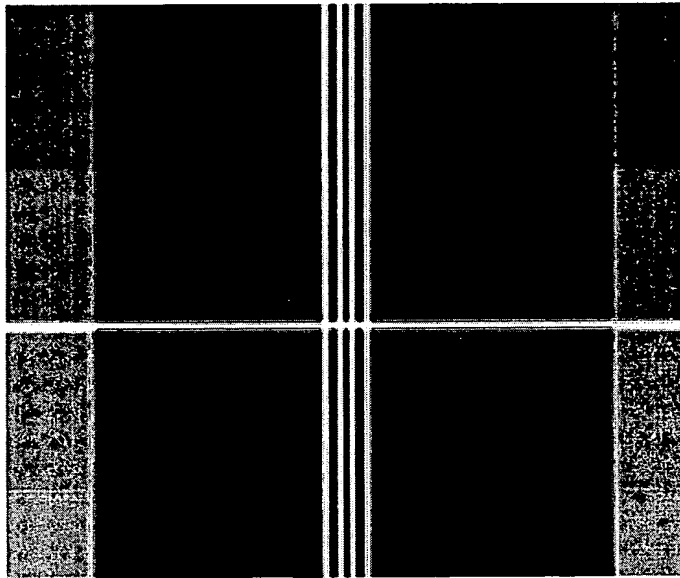


Figure B14. Designed test pattern with focus on the center lines.

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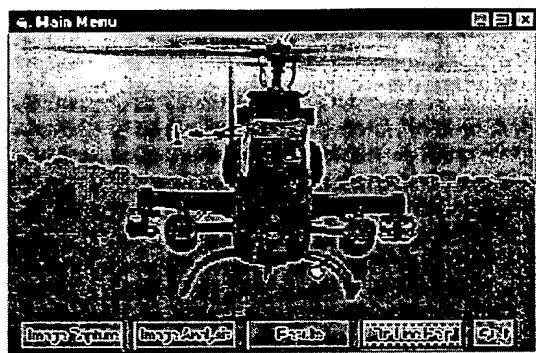


Figure B15. Opening screen of prototype software.





Figure B16. Image capture module .

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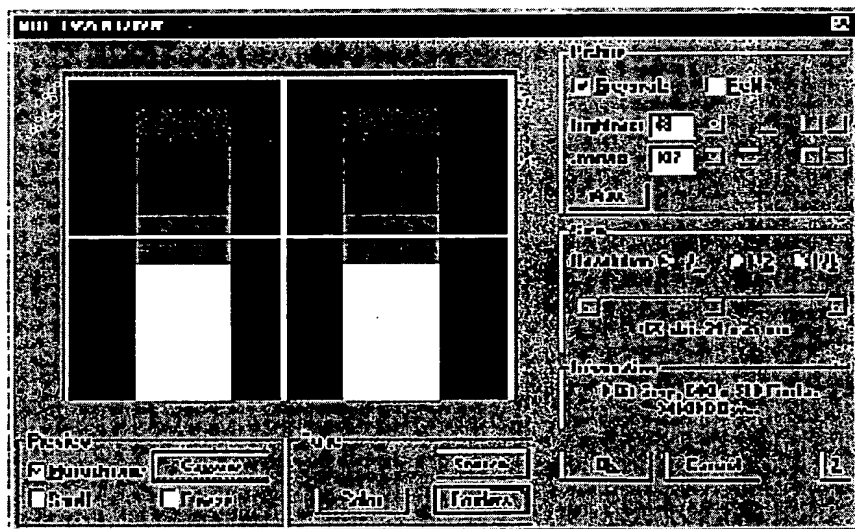


Figure B17. Image capture component.

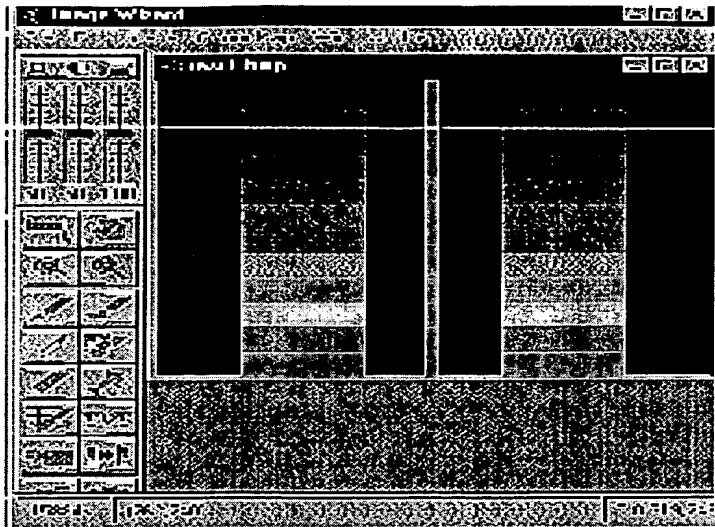


Figure B18. Image processing component.

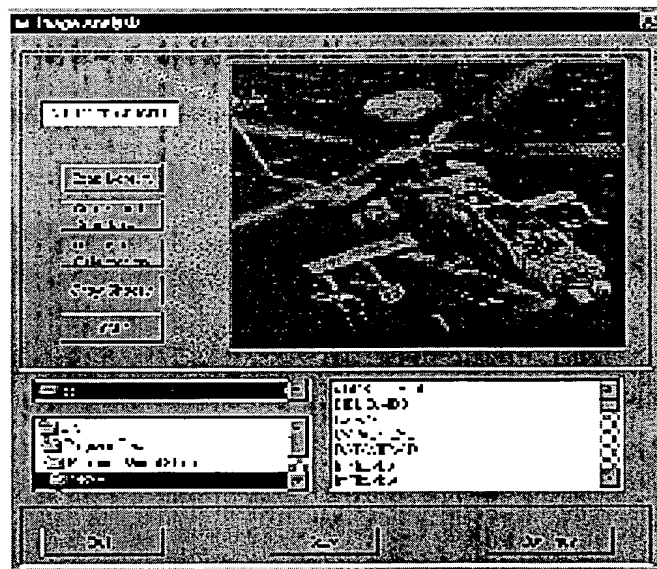
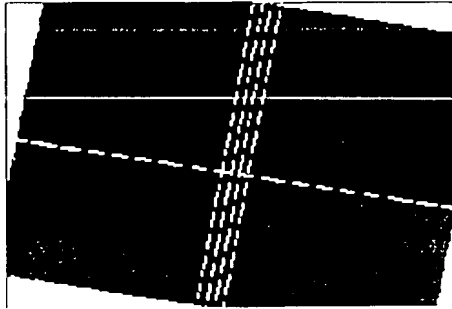
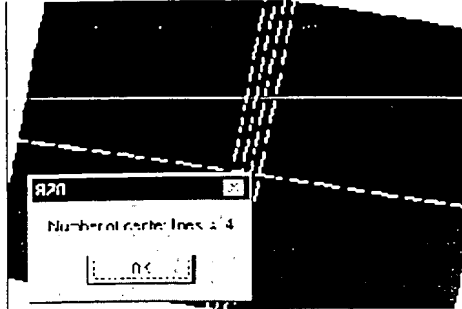


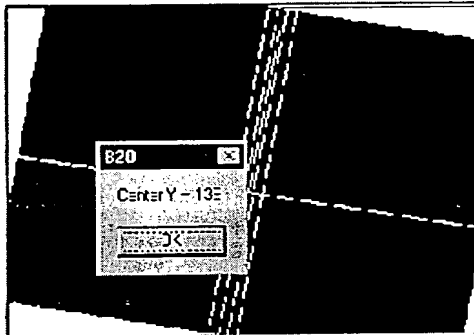
Figure 69. Image ~~and~~ analysis and interpretation module.



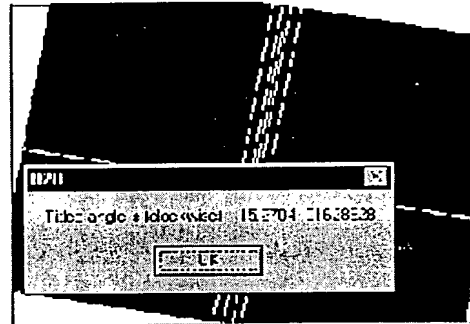
(a)



(b)



(c)



(d)

Figure 20. Tilted test pattern binary images from image analysis module.

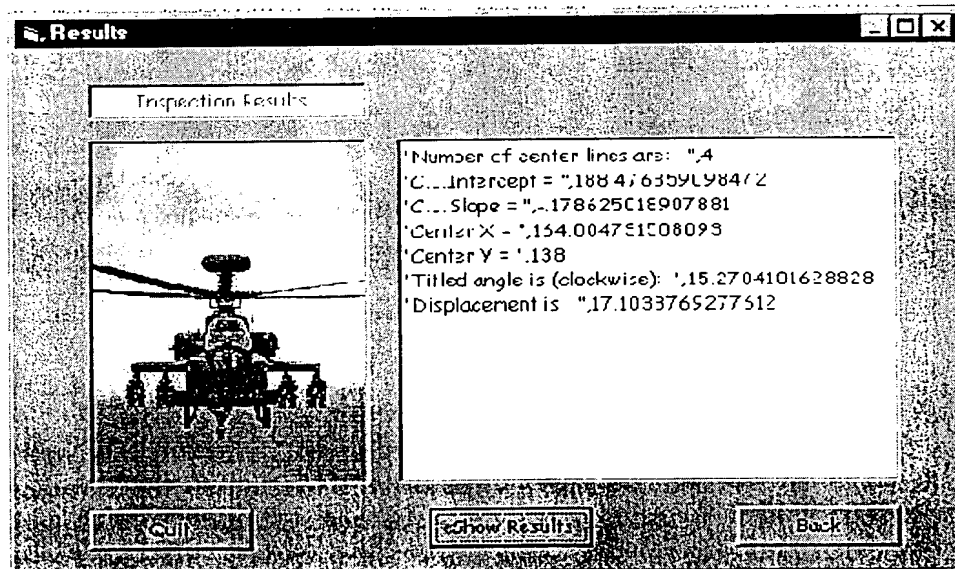


Figure 21. Overall testing results of an HMD.

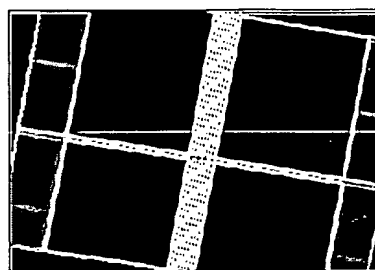
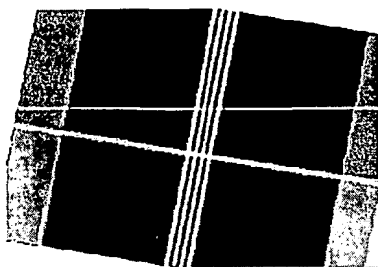


Figure B22. Tilted test pattern before (left) and after (right) Sober edge detection.

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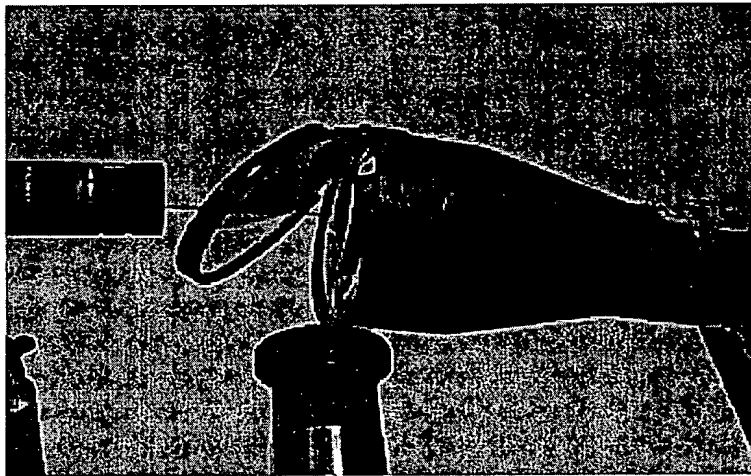
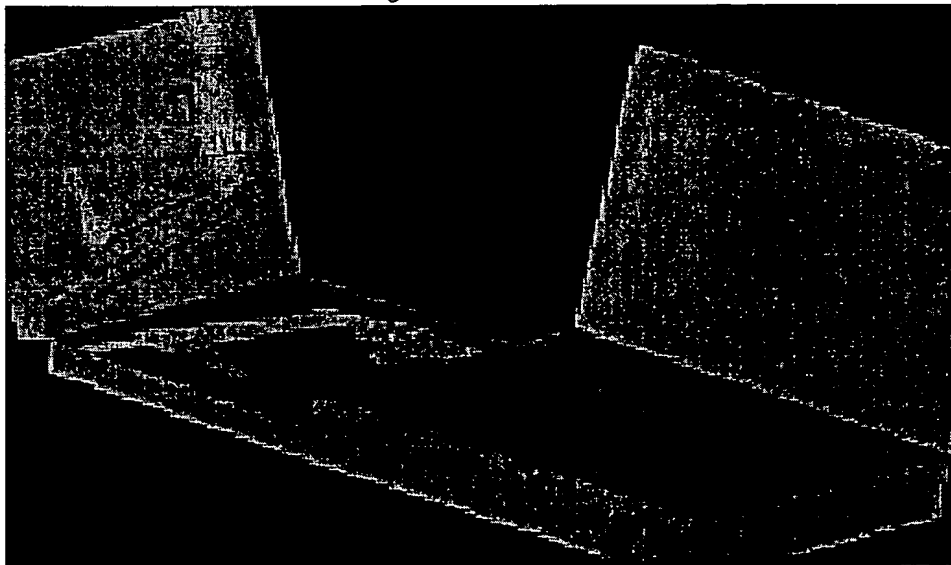


Figure B23. Investigation of CCD image capture arrangement.

Figure B24. CAD concept of prototype hardware design.



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